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ARCHÆOLOGICAL WORK IN OHIO.

BY GERARD FOWKE.

EXCAVATION OF A MOUND IN PIKE COUNTY, OHIO.¹

On the farm of W. M. Volgamore, three and one half miles south of Piketon, is the largest mound in the Scioto Valley between Chillicothe and the Ohio River except one four miles south of the "High Banks" in Ross County. It stands on the third of four terraces bordering the river here, the first being regularly and the second occasionally overflowed. A mile below are two earthen enclosures, one square the other circular, each containing between fifteen and twenty acres and connected by parallel walls. Many other remains exist in the county, notably the much-mentioned "Graded Way," which, however, is mostly a natural formation.

The mound has an elliptical base 130×110 feet, the longer axis north and south, and its altitude while intact was fully 18 feet. In 1894 the owner scraped off the upper portion, leaving it a truncated cone whose top was about seven feet above the surrounding level. He also scraped a narrow trench across the middle to within three feet of the bottom. At this depth he reports finding two skeletons with some shell beads and two copper bracelets. He went no farther but replaced such bones as he saw and filled the trench from the side. The outline of the mound being destroyed by this work, it was difficult to judge where the axes would intersect; a point was chosen (it may have been several feet out of the way) as nearly over the middle of the base as could be determined, and from this as a center a circle was described with a diameter of forty feet. All the earth within this limit to the original surface was then removed, which was found at a depth of between eight and nine feet. The difference between this measure and that of the height of the mound from the outside, is due

¹ During the past summer and autumn (1895) investigations have been carried on in certain Ohio mounds by Mr. Gerard Fowke in behalf of the Academy of Natural Sciences of Philadelphia. This report and the succeeding ones give the results of his investigations. All objects obtained by Mr. Fowke are now in the archaeological collections of the Academy.

Clarence B. Moore.

partly to compression of the earth by the weight of the structure, and partly to the increase and looseness, from cultivation, of soil in the field.

The mound presented no peculiarity of construction; its erection had been practically continuous, at least to the height at which this excavation began, for there was neither line of demarcation in the small masses of dumped earth composing it, nor any trace of vegetable growth such as would take place if the work were interrupted. Several sorts of earth entered into its composition, mostly like that immediately around, though it contained some that is not to be found, superficially, nearer than 300 or 400 yards away; such may, however, occur closer at hand beneath the surface. A small part of it was gathered where leaves or grass had recently been burned off.

The bones mentioned by the owner were found at the depth he indicated; and other fragments were found below them as far as to the bottom of the mound, scattered through earth that plainly had been disturbed since first deposited. The men who did the scraping, however, insist they did not go so deep, neither was any digging done in the trench they made; if this be true, these lower bones must have been thrown promiscuously, mingled with earth, into a hole dug by the builders of the mound when it had reached a height of three or four feet.

Nineteen feet north of assumed center the skeleton of a young child was found eighteen inches above the original surface. An excavation measuring six feet east and west, by four feet north and south, had been made when the mound, or this portion of it was less than three feet high, and lined with a thin layer of bark or wood which extended beyond it on every side; the bottom was quite irregular except in the north-west corner where a space had been leveled barely large enough to afford a resting place for the body, which lay extended on the back with head to the east. With the bones of the neck were 65 copper beads; these had been strung on vegetable fiber, along with small disk shell beads, the latter too soft for recovery. On the right wrist were two small copper bracelets.

Nothing else was found above the natural surface. Below the top soil is black loam a foot deep, resting on a stratum of hard, gravelly red earth two feet thick, below which is the gray sand whose bottom has never been found. This definite arrangement made it easy to ascertain the aims and methods of the builders.

The burials within the mound were only incidental, and had no part in the original purpose for which it was erected. It had been designed to cover only two graves. The first of these had its axis almost coincident with a radius extending nearly northeast from the center stake. At eight feet to each side of this line began a thin seam of decayed wood which sloped uniformly toward the axis till it reached a depth of two feet at four and one-half feet from its place of beginning; the earth below it had never been disturbed, while that above it had been dumped in to restore the level. At this distance it came to the edge of a pit seven feet in width dug one foot into the gray sand, with walls vertical or in some places slightly overhanging on account of the caving-in of the loose material while the work was progressing. In the bottom of the hole (four feet deep) had been placed two to three inches of the red gravel earth, on which lay three to four inches of gray sand, thus reversing their proper order; above this came the seam of decayed wood extending entirely across the excavated space to the natural surface, as mentioned above; next in order was a thin layer of burned earth, ashes, and charcoal reaching from the shoulders to the knees, and slightly beyond the frame on each side of a skeleton nearly six feet long, which lay extended on the back, with feet toward the center of the mound. On each wrist were two small copper bracelets; about the waist, as if belonging to a belt, was nearly a pint of disk shell beads, some of them being too soft to save; between the femurs were a few *Marginellas*; about the neck were eleven cylindrical or barrel-shaped beads made of some thick shell and drilled lengthwise; under the feet was a knife or spear, three inches long, of *Basanite*. Some portions of the bones were quite hard and solid; others soft from decay. The skull, 21 feet from the center stake, lay in a mass of very wet decayed wood and ashes, and was in fragments; the crown was stained a bright red, probably with *Hematite*.

The confused and irregular layers and streaks of decayed wood in the dark soil with which the grave was filled were perplexing; but it appeared that the body had been protected by a layer of wood supported by chunks and by poles whose ends were thrust into the sand on either side. Earth was thrown on this covering to the original level of the soil; saplings or small poles were then laid around the margin of the grave to uphold a roof of wood or bark. After this

was partly decayed, it was covered with a small heap of dark earth immediately preliminary to beginning the mound.

Each end of the grave was followed to the red gravel, found at two feet from the head and the same distance from the feet of the skeleton. It could not be ascertained whether the same slope continued outward from these points as from the sides; for the eastern end was three feet beyond the bank surrounding the area being examined, making it dangerous to follow farther; while at the other end nothing could be made out with certainty, as other operations, carried on about the same time, had encroached on this space.

Figure 1 shows a cross-section; and Figure 2 a longitudinal section of so much as was definitely outlined.

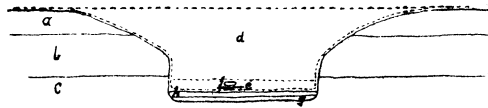


FIG. 1. Cross section, first grave. Volgamore mound.

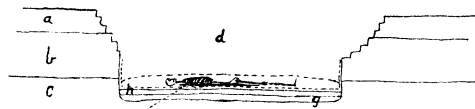


FIG. 2. Longitudinal section, first grave. Volgamore mound.

- a.* Black soil, 1 foot.
- b.* Red gravel, 2 feet.
- c.* Gray sand, bottomless.
- d.* Mixed earth filling grave and continuous with that of the mound above.
- e.* Ashes; charcoal, and burned earth, 1 inch thick.
- f.* Skeleton.
- g.* Red gravel, 2 to 3 inches thick (deposited).
- h.* Gray sand, 3 to 4 inches thick (deposited).
- - - (Dotted lines.) Decayed wood and bark, varying in thickness from a streak to 6 inches.

Zig-zag line in Fig. 2 denotes limit of certainty regarding structure.

Scale: one-ninth of one inch equals one foot.

The second grave was by far the largest that has been recorded in this region. Its dip began on the south side at the margin of the forty-foot circle cleared out; on the north side, a foot south and two feet west of the assumed center mark of the tumulus. The outline was tortuous, but could easily be traced by the decayed wood which

had lined it, or by the difference in color and consistency of the earth on either side. When fully exposed, by removal of the top soil around it, it formed an irregular ellipse with a narrow prolongation toward the east. Its entire length was 27 feet on a line almost exactly east and west; its maximum breadth nineteen feet. On the east, north, and south sides, the dip was gradual as in the first grave; but on the west side it was abrupt the entire depth. From near the top of the red gravel, except at the east end where a more gradual slope was left to facilitate the passage of the aboriginal undertakers, the walls were carried directly downward four feet into the gray sand, forming a pit, measuring on the bottom, sixteen feet from east to west, ten feet from north to south, and seven feet deep from the surface. In this, midway between the sides but a little nearer the western end, lay a skeleton about six feet long, extended on the back, head east, arms by the sides, left hand under the hip. The skull was broken by pressure of the earth. About the neck were a few disk beads, and just above the knees a few *Marginellas*, all very soft. On each forearm were three copper bracelets, one large and two small. One of the larger was so corroded as to fall in two; it was not made of a solid rod, as is usual, but of sheet copper rolled into a cylinder and bent to the desired form. [See note.]

There was no trace of cloth or skins, except adherent to the bracelets, unless the soft, loose, black earth about the bones was due to decay of such material. A thin seam of bark above the body reached a little to each side, but none had been placed beneath it. The wood found about the outer part of the excavation did not extend down the sides into it; small disconnected patches were seen at a few places in the earth filling the grave, but if it had ever been continuous at any level no evidence of such fact now remained.

A longitudinal section is given in Fig. 3, and cross sections, at intervals of five feet, in Figs. 4-8.

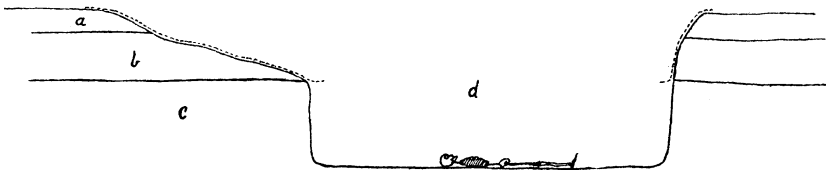


FIG. 3. Horizontal section of large grave in Volgamore Mound.



FIG. 4.

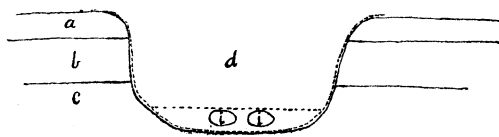


FIG. 5.

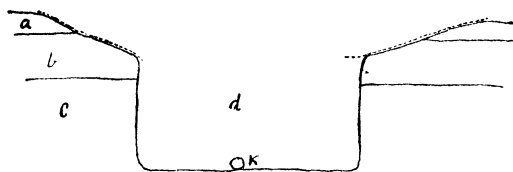


FIG. 6.

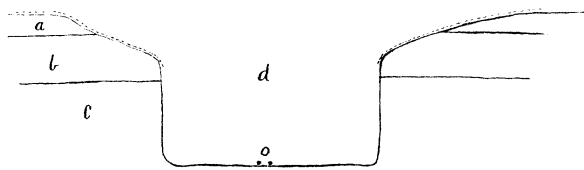


FIG. 7.

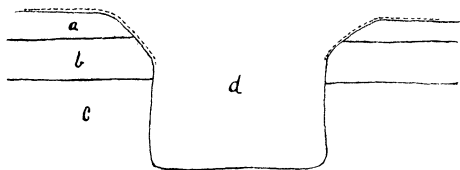


FIG. 8.

FIGS. 4-8. Cross sections at intervals of five feet. Large grave, Volgamore Mound. One-ninth of one inch equals one foot.

a. Black soil, 1 foot.

b. Red gravel, 2 feet.

c. Gray sand, bottomless.

d. "Dumped" earth, continuous to top of mound.

i, i. Mingled red and gray, "dumped."

k. Head of skeleton.

o. Legs of skeleton.

---- (Dotted line) Decayed wood or bark.

NOTE.—During extended researches in the Florida mounds a considerable collection of objects of copper, almost exclusively ornaments, has been gathered.

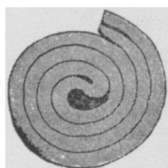


FIG. 9. Section of copper bracelet. (Twice actual size.)

These ornaments, with the exception of several heavy beads, are of thin sheet copper. The only other objects of copper not purely ornamental are piercing implements, sometimes pointed at both ends, and these a careful examination shows usually to be made of sheet copper hammered around and around on itself. It is interesting to note that in Ohio, a region where objects of solid copper are of not infrequent occurrence, a use of sheet copper similar to that seen in Florida is observed.

A number of the bracelets found by Mr. Fowke, by their weight, lighter than their size would indicate, seem to be of sheet copper. Fig. 9 gives a section of the bracelet, once enlarged.

C. B. M.

THE CALDWELL MOUND.

Where the Scioto River passes from Pike in Scioto county the terraces bordering it are reduced to two ; the first is subject to overflow, while the second marks the highest level at which drift was deposited in this vicinity. A few hundred feet south of the county line, sixteen miles from the Ohio River, on the farm of Mr. S. A. Caldwell, a mound nine feet high and seventy-five feet in diameter at the base stood on the brink of the higher terrace ; in the same field are two smaller mounds ; and skeletons with pottery and other relics have been found near the surface in excavating for gravel along the slope.

On the larger mound a circle forty feet in diameter was laid off, with the apex as a center, and all within this limit removed to the undisturbed earth beneath. The structure was composed entirely of the clayey soil and clay subsoil which here overlies the gray gravel ; it was quite dry and packed so hard that the entire mass had to be loosened with picks. Roughly-finished arrow-heads, flint chips, and a few fragments of pottery, the latter of clay and coarsely-pounded stone, were scattered promiscuously through it. Near the outer wall of the excavated area on the east and south sides were several root holes, denoting that small trees, three to six inches in diameter, had been burned or cut off before the mound was begun. These were not post-holes, like those to be described, for they went much deeper and turned aside at or near the lowest point to which they could be followed.

Traces or fragments of human remains were found in six places. At one foot above the bottom, four feet south, and two feet west of the center, was a skull, the bones belonging with it extending southward. At the same level, five feet south, eight feet west of center was a skull stained with hematite; there were also traces of bone six inches above the last. At three and one-half feet above the bottom, ten feet east of the center, was a skull which seemed to have been placed with the face uppermost; three feet west of it, and six inches higher, with no trace of other bones in the intervening space, was a pelvis with leg bones extending southward from it but not parallel; immediately beneath, was a dark line extending entirely across the mound, showing that the work had been stopped for a time at this height; the body or skeleton had been laid on what was then the top of the mound, covered with bark on which was thrown a foot of earth running to a feather-edge a foot west of center. After this, another interval in the labor followed, as shown by a similar line. A body had then been laid on the summit, with the head six and one-half feet east of the center, the feet toward the west. On the skull were several pieces of mica, some of them trimmed to a crescentic outline, and a small, very smooth, sandstone ornament resembling a fiddle bridge in shape. The last skull discovered was six feet above the bottom, eight feet south of the center; it, also, had mica lying on it, some cut like that above mentioned. All the bones found were so soft as to fall to pieces on exposure; and most of them were so decayed that they could be traced only as a streak or thin layer by their color.

When the bottom was reached, the result was disappointing; there was no trace of a grave or other form of burial in or on the soil. A line of soft earth which appeared to form the edge of an excavation, proved to be only a narrow trench 8 to 12 inches wide at the top, somewhat narrower at the bottom, and not more than a foot deep, surrounding an irregular quadrilateral space about twenty feet across. A considerable part of the undisturbed surface now exposed was covered with a layer of ashes and charcoal, containing many small fragments of burned animal bone, but no pottery fragments or other art products. It varied from a thin streak to a layer of 3 or 4 inches; where it was heaviest the earth beneath was considerably burned. Many post-holes were found, some five or six inches in diameter and about two feet deep, others a foot in either dimension;

the parts were burned prior to the depositing of at least some of the ashes, for the latter extended in an unbroken layer over the holes, except in three or four places where the posts were left projecting somewhat above the surface, as shown by the hollow molds in the body of the mound which had packed around them before their decay. These molds were lined with the charcoal from the burned stumps. The trench had been dug through the ashes, except where it extended beyond them on the west side; but their straight margin here as contrasted with the curved outline in other parts, and the abrupt change of direction at the northwest corner, indicate that they had been swept or scraped away on this side before the digging began.

In a mass of ashes about four inches thick, four to six feet east of the center, were many small fragments of bones of a child, burned until nearly destroyed; nine feet south, three feet east of the center were a few fragments of bones of an adult, similarly burned. Both deposits were lying on the natural surface in the bed of ashes.

No explanation or interpretation of these facts will be attempted; the reader must form his own conclusions. There may have been some sort of a building of which the posts formed a part; but they do not seem well arranged for such purpose, and no others exist within the excavated space, for every foot of it was carefully examined. The ash-bed, if the fact of a house be admitted, may be due to ordinary domestic life; but this would not account for the cremated human bones. Nor could the latter be so thoroughly charred unless intentionally burned, for, although they were in a mass of ashes, there was no indication of any considerable amount of heat about where they were found.

To repeat:—The posts were burned off, as is proven by the charcoal found in the holes where they stood, and especially in the casts above the ashes; the latter were deposited, at least in part, after such burning as is shown by their continuity above the holes; and the trench was dug still later, because the ashes came up to its margin on both sides and stopped there, and in two or three places the yellow earth from its bottom lay directly upon them. Further, only a short period of time was embraced in these stages, for the projecting ends of the posts were still solid enough when the mound was built for the earth deposited over and around them to pack so firmly that it

held its shape after they had disappeared. Finally, the construction of the mound was intermittent.

EXCAVATION OF A LOW MOUND IN PIKE COUNTY.

A mile north of Wakefield, in Pike County, on the Barnes farm, are the enclosures figured by Squier and Davis as the "works in Seal Township." Near the south-east corner of the square enclosure is a mound, now about three feet high and sixty feet in diameter, surrounded by a ditch and embankment. A circle 25 feet across was laid off on the highest part of this and the earth removed to the sub-soil.

About eight feet northwest of the center, and 16 inches above the original surface were two or three fragments of human skull; and between three and four feet south of them portions of human femora; these probably were the remains of a body that had been laid extended with head to the north. No other human remains were found in the structure.

Eleven feet south of the center were several small pieces of mica, some of them fragments of trimmed and perforated pieces, others rough flakes split off from a larger piece; on them lay nine flint blocks or cores, evidently raw material for implements; these were partially covered with a large sheet of mica; one of the blocks was chipped into a rude hatchet-form. A foot east of these were two gorgets; one was of close-grained slate, well made, with a single perforation; the other of micaceous sandstone with two perforations. Three feet east of these was a deposit containing a finely wrought flint knife, a rough and a broken arrow-head, a flint block like those first found, and a sheet of mica. These were all at the same level as the human bones found on the opposite side of the mound; but there was no evidence of a burial at the place they occurred. The flint blocks were irregular fragments of larger nodules, with a chalky exterior, a coating of silicate of lime, and the concretionary structure well marked in some. No flint of this character has ever been found in place in Ohio; a similar stone occurs abundantly near the Wyandotte Cave in southern Indiana, but is not known to exist at a nearer point.